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EXAMINER	
PITT, BRYAN W	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,014	OLSSON ET AL.	
	Examiner	Art Unit	
	Bryan Pitt	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) *1-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *25 May 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 42 is objected to because of the following informalities: the limitation "means for determining the service class of the payload data from said IP data packets associated with said PDP context" is repeated in lines 12-13. Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 31, 36, 39, 40 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 31 recites the limitation "said IP data packets" in line 2. There is insufficient antecedent basis for this limitation in the claim.

4. Claim 36 recites the limitation "the payload data" in line 10. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 39 recites the limitation "said means for communicating" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. Specifically, it is not clear if the means for communicating is the same as the means for sending in claim 37, or a different means for communicating. For the purpose of examination it is assumed that the means for communicating and means for sending are the same.

6. Claim 40 recites the limitation "said accumulated volume" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 42 recites the limitation "said service class for the upstream payload" in lines 16-17. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 42 recites the limitation "said service class for the downstream payload" in lines 18-19. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 42 recites the limitation "said extension headers" in line 20. There is insufficient antecedent basis for this limitation in the claim. Specifically it is unclear whether the extension headers with downstream information or extension headers with upstream information is being referred to. For the purpose of examination, it is assume to refer to the extension headers containing downstream information.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 27-34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Specifically, these claims refer to a packet data unit which is a data structure and is not statutory subject matter.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 22-24, 26-28, 31, and 33-35 are rejected under 35 U.S.C. 102(e) as being anticipated by US2004/0266394 to Mizell et al.

Regarding claim 22, Mizell teaches a method of communicating charging information for a particular mobile station in a network including at least a serving node and a gateway node, comprising the following steps:

receiving, at said gateway node, a data packet comprising a header and a payload (i.e. Mizell teaches a GGSN (gateway GPRS service node) downloading a data packet from an IP network; paragraph 0030. IP packets are known to comprise headers and payloads);

identifying a particular Packet Data Protocol (PDP) context for a particular mobile station (i.e. the GGSN downloads the packet upon request by a MN (mobile node) for which a PDP context has been created and delivers the packet to the MN via a SGSN (serving GPRS support node), therefore identifying a particular PDP context; paragraph 0030, 0032);

gathering, at said gateway node and from said received data packet, charging information relating to said PDP context (i.e. the GGSN extracts charging info; paragraph 0014);

creating a GPRS Tunneling Protocol (GTP) packet data unit, said GTP packet data unit including a header, a payload, and a pre-determined service class extension header (i.e. GGSN creates a GTP packet by encapsulating the downloaded data packet; paragraphs 0014, 0030. The GGSN uses a GTP extension header to communicate charging information to the SGSN; paragraph 0013); and

transmitting, from said gateway node to said serving node, said GTP packet data unit containing said charging information (i.e. GGSN forwards the GTP packet tot the SGSN; paragraph 0014);

wherein said charging information relates to said PDP context for said mobile station (i.e. the charging information relates to the packet requested by the MN under the PDP context; paragraph 0014), said pre-determined service class extension header is reserved for service class information pertaining to at least one IP packet payload for said PDP context (i.e. the extension header is used to provide charging information pertaining to the data packet, therefore reserved; paragraph 0014) and said header comprises a next extension header type indicating that said pre-determined service class extension header follows (i.e. the next extension header flag is used; paragraph 0036).

Regarding claim 23, Mizell teaches the method according to claim 22, wherein said network includes a charging node associated with said serving node, the method further comprising the following steps after said transmitting step:

receiving, at said serving node, said charging information (i.e. the SGSN receives the GTP packet from the GGSN; paragraph 0032); and

sending, from said serving node to said charging node, information corresponding to said charging information (i.e. the SGSN sends a charging record to the CGF (charging gateway function); paragraph 0035).

Regarding claim 24, Mizell teaches the method according to claim 22, wherein said gathering step further comprises the following steps:

performing a packet inspection of said received data packet (i.e. the GGSN inspects the packet for content, source, and destination; paragraph 0030); and

assigning a predefined service class for said data packet based on said packet inspection (i.e. the GGSN uses an extension header to pass accounting information to the SGSN consisting of content information, therefore assigning a service class; paragraph 0030).

Regarding claim 26, Mizell teaches the method according to claim 22, wherein said network comprises a GPRS network, said serving node comprises a Serving GPRS Support Node, and said gateway node comprises a Gateway GPRS Support Node (i.e. Mizell teaches a GPRS network with GGSN and SGSN nodes; paragraph 0025).

Regarding claim 27, Mizell teaches a packet data unit used for communicating charging information, said packet data unit comprising:

a header; a payload (i.e. a GGSN sends a GTP packet to a SGSN comprising a header and payload; paragraphs 0014, 0030); and

at least one predetermined service class extension header (i.e. the GGSN uses a GTP extension header to communicate the charging rate information; paragraphs 0014, 0030, 0033); and

wherein said header comprises a next extension header type indicating that a predetermined service class extension header follows (i.e. the GGSN set a flag to indicate the use of an extension header; paragraph 0033),

said predetermined service class extension header being reserved for service class information pertaining to at least one IP data packet payload for a given PDP context (i.e. the

extension header is used to provide charging information pertaining to the data packet, therefore reserved; paragraph 0014).

Regarding claim 28, Mizell teaches the packet data unit according to claim 27, wherein said pre-determined service class information is associated with a service class of said payload of said packet data unit (i.e. the charging rate is based on the packet content, therefore associated with a service class of the payload; paragraphs 0013, 0014).

Regarding claim 31, Mizell teaches the packet data unit according to claim 27, wherein said payload data of said IP data packets relates to both payload data transmitted upstream and payload data transmitted downstream for said PDP context and for a given user (i.e. Mizell teaches encapsulating into GTP packets IP packets downloaded (downstream) at the request (upstream) of an MN through a PDP context, therefore the GTP packet is related to both the request and the downloaded IP packet; paragraph 0030, 0032).

Regarding claim 33, Mizell teaches the packet data unit according to claim 27, wherein said packet data unit is a GTP-U PDU packet and said payload is a GTP-U PDU payload (i.e. the GTP packet is transferred from GGSN to SGSN, therefore a GTU-U packet; paragraph 0014).

Regarding claim 34, Mizell teaches the packet data unit according to claim 27, wherein said extension header comprises at least a main service class field and a sub-class field (i.e. extension header comprises extension header content (main field) and next extension header type (sub-field); paragraph 0036).

Regarding claim 35, Mizell teaches a gateway node for communicating within a system performing packet inspection and service classification, said system including a packet data network and a serving node, wherein IP data packets may be communicated for identification of

a given predetermined service class out of a plurality of predetermined service classes within said system, said gateway node comprising:

means for receiving, at said gateway node, an IP data packet from said packet data network (i.e. GGSN receives a data packet from an IP network, therefore a receiver on a network port; paragraph 0025, 0030, 0039);

means for extracting the payload of said IP data packet (i.e. GSGN inspects the payload of a downloaded IP packet, therefore a processor for extracting a payload; paragraph 0030, 0040);

means for determining a value, out of a plurality of values corresponding to a plurality of different service classes, said determined value corresponding to a service class for said payload (i.e. GGSN assigns a charging rate for each downloaded packet based on the packet contents (service class), therefore a processor for determining packet content type; paragraph 0030, 0041);

means for assigning said determined service class to a service class extension header (i.e. GGSN assigns a charging rate for each downloaded packet based on the packet contents, therefore a processor; paragraph 0030, 0040);

means for creating a packet data packet unit by including said service class extension header; means for inserting said payload in said packet data packet unit; (i.e. GGSN creates a GTP packet by encapsulating the downloaded packet, therefore a processor for creating packets; paragraph 0030, 0040); and

means for transmitting said packet data unit from said gateway node to said serving node (i.e. GGSN transfers the GTP packet to a SGSN, therefore a transmitter on a Gn interface; paragraph 0030, 0039).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizell in view of US 2002/0058496 to Bos et al.

Regarding claim 25, Mizell teaches the method according to claim 23, but does not specifically teach wherein said charging node comprises a CAMEL SCP node and said charging information is signaled by means of the CAP protocol. However, at the time the invention was made the preceding limitation was known in the art of communications.

Bos teaches a GPRS network comprising CAMEL nodes that uses a CAP protocol interface to communicate charging information between the bearer level system (i.e. the GGSN and the SGSN) and a CAMEL SCP (service control point) in order to remove the need for a separate charging interface and thus optimize the network architecture. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the charging function of Mizell to incorporate a CAMEL architecture as taught by Bos in order to optimize the network architecture.

16. Claims 29-30, 32, 36-38, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizell in view of US 2008/0096523 to Lundin et al.

Regarding claim 29, Mizell teaches the packet data unit according to claim 27, but does not specifically teach wherein said at least one pre-determined service class extension header

comprises a volume count pertaining to an amount of payload of said packet data unit, said volume count belonging to said PDP context. However, at the time the invention was made the preceding limitation was known in the art of communications.

Lundin teaches a GPRS network wherein the GGSN adds traffic type indicators to the GTP header that are used to indicate the appropriate charging scheme to each packet; paragraph 0028. Lundin teaches that one of the indicators may be the chain ID (volume count) to keep track of the number of packets received such that those packets that cannot be identified until a required number of packets have been received can be processed; paragraph 0028. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the GTP packets of Mizell to include chain ID as taught Lundin in order to handle packet chains.

Regarding claim 30, Mizell teaches the packet data unit according to claim 27, wherein said pre-determined service class information corresponds to the service class of payload data of IP data packets contained in a plurality of different packet data units that are associated with said PDP context (i.e. the charging rate is based on the packet content, therefore associated with a service class of the payload; paragraphs 0013, 0014).

Mizell does not specifically teach wherein said at least one predetermined service class extension header comprises a volume count corresponding to the aggregated volume of said payload data of said IP data packets. However, at the time the invention was made the preceding limitation was known in the art of communications.

Lundin teaches a GPRS network wherein the GGSN adds traffic type indicators to the GTP header that are used to indicate the appropriate charging scheme to each packet; paragraph 0028. Lundin teaches that one of the indicators may be the chain ID (volume count) to keep

track of the number of packets received such that those packets that cannot be identified until a required number of packets (aggregate volume) have been received can be processed; paragraph 0028. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the GTP packets of Mizell to include chain ID as taught Lundin in order to handle packet chains.

Regarding claim 32, the combination of Mizell and Lundin teaches the packet data unit according to claim 30, wherein at least two service class extension headers are included in said packet data unit, said at least two service class extension headers are associated with at least two different service classes (i.e. Lundin teaches appending traffic type information to the header of a GTP packet including service class, cost info, and/or chain ID; paragraph 0028, 0044. Therefore it would be obvious to one skilled in the art that the combination of Mizell and Lundin teaches adding more than one extension headers of different types).

Regarding claim 36, Mizell teaches a serving node for communicating with a charging node, said serving node comprising:

means for receiving a packet data unit comprising a service class extension header (i.e. SGSN receives a GTP packet with an extension header from a GGSN, therefore a receiver on a Gn interface; paragraph 0033, 0039);

means for determining a service class value from said service class extension header (i.e. SGSN extracts the charging information from the GTP extension header, therefore a processor for analyzing GTP packets; paragraph 0033, 0041);

means for determining a volume count, for a given service class and a given PDP context (i.e. SGSN has a processor to extract packet volume from the GTP packet; paragraph 0033, 0041);

means for storing said volume count (i.e. SGSN keeps track of the volume of packets delivered, therefore a processor and memory for storing volume; paragraph 0039, 0045);

means for transmitting the payload data associated with said PDP context (i.e. SGSN forward the packet to the MN via a BSC or RNC, therefore a transmitter on a Gb or Iu interface; paragraph 0025, 0033, 0039); and

means for sending associated values of said determined service class value and said volume count from said serving node to said charging node (i.e. SSGN sends a CDR containing volume count and charging info (service class value) to the CGF, therefore a transmitter for communicating with a charging node; paragraph 0035, 0039).

Mizell does not specifically teach that the volume count is determined from the extension header, however, at the time the invention was made the preceding limitation was known in the art of communications.

Lundin teaches a GPRS network wherein the GGSN adds traffic type indicators to the GTP header that are used to indicate the appropriate charging scheme to each packet; paragraph 0028. Lundin teaches that one of the indicators may be the chain ID (volume count) to keep track of the number of packets received such that those packets that cannot be identified until a required number of packets have been received can be processed; paragraph 0028. Thus it would be obvious to one skilled in the art that the combination of Mizell and Lundin teaches extracting a volume count from a GTP extension header. Therefore it would have been obvious to one of

ordinary skill in the art at the time of invention to modify the GTP packets of Mizell to include chain ID as taught Lundin in order to handle packet chains.

Regarding claim 37, Mizell teaches a serving node for communicating with a charging node, said serving node comprising:

means for receiving a packet data unit comprising a service class extension header (i.e. SGSN receives a GTP packet with an extension header from a GGSN, therefore a receiver on a Gn interface; paragraph 0033, 0039);

means for extracting a service class value from said service class extension header and a volume count (i.e. SGSN has a processor to extract packet volume from the GTP packet; paragraph 0033, 0041);

means for storing said volume count, said volume count relating to a given service class and a given PDP context (i.e. SGSN keeps track of the volume of packets delivered to a MN through a PDP context and each packet's charging rate (service class), therefore a processor and memory for storing volume; paragraph 0039, 0045);

means for transmitting payload data associated with said PDP context (i.e. SGSN forward the packet to the MN via a BSC or RNC, therefore a transmitter on a Gb or Iu interface; paragraph 0025, 0033, 0039); and

means for sending associated values of said service class and said volume count from said serving node to said charging node (i.e. SSGN sends a CDR containing volume count and charging info (service class value) to the CGF, therefore a transmitter for communicating with a charging node; paragraph 0035, 0039).

Mizell does not specifically teach that the volume count is determined from the extension header, however, at the time the invention was made the preceding limitation was known in the art of communications.

Lundin teaches a GPRS network wherein the GGSN adds traffic type indicators to the GTP header that are used to indicate the appropriate charging scheme to each packet; paragraph 0028. Lundin teaches that one of the indicators may be the chain ID (volume count) to keep track of the number of packets received such that those packets that cannot be identified until a required number of packets have been received can be processed; paragraph 0028. Thus it would be obvious to one skilled in the art that the combination of Mizell and Lundin teaches extracting a volume count from a GTP extension header. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the GTP packets of Mizell to include chain ID as taught Lundin in order to handle packet chains.

Regarding claim 38, the combination of Mizell and Lundin teaches the serving node according to claim 37, wherein said volume count is associated with an accumulated volume count pertaining to a given PDP context (i.e. Lundin teaches keeping track of packet chains, therefore accumulated volume count; paragraph 0028).

Regarding claim 41, Mizell teaches a gateway node for communicating within a system performing packet inspection and service classification, said system comprising a packet data network and a serving node, wherein IP data packets comprising payload data may be communicated for identification of a given predetermined service class out of a plurality of predetermined service classes within said system, said gateway node comprising:

means for receiving, from a packet data network, an IP data packet in a continuous downstream of IP data packets associated with a given PDP context (i.e. GGSN receives a data packet from an IP network on request from a MN through a PDP context, therefore a receiver on a network port; paragraph 0025, 0030, 0039);

means for receiving a service class identification for said IP data packet;

means for identifying a service class for the payload data of said IP data packet, said payload data being associated with said PDP context (i.e. GGSN assigns a charging rate for each downloaded packet based on the packet contents, therefore a processor for identifying a service class; paragraph 0030, 0041);

means for assigning said identified service class to a service class extension header (i.e. the GGSN uses a GTP extension header to communicate charging information based on packet content (service class), therefore a processor for assigning identified service classes to extension headers; paragraph 0030, 0033, 0040);

means for inserting said service class extension header and said payload data in a packet data unit; (i.e. GGSN creates a GTP packet by encapsulating the downloaded packet and adding an extension header, therefore a processor for creating packets; paragraph 0030, 0040); and

means for transmitting said packet data unit to said serving node (i.e. GGSN transfers the GTP packet to a SGSN, therefore a transmitter on a Gn interface; paragraph 0030, 0039).

Mizell does not specifically teach: means for determining whether said IP data packet is incompletely classified; means for storing an aggregated volume count associated with incompletely classified payload data associated with said PDP context; means for storing information associated with incompletely classified IP data packets for said PDP context; means

for storing an aggregated volume count for incompletely classified payload data associated with said PDP context; and means for assigning an aggregated volume count for previously incompletely classified payload data of said PDP context to said service class extension header; however, at the time the invention was made the preceding limitation was known in the art of communications.

Lundin teaches a GPRS network wherein the GGSN adds traffic type indicators to the GTP header that are used to indicate the appropriate charging scheme to each packet; paragraph 0028. Lundin teaches that one of the indicators may be the chain ID (volume count) to keep track of the number of packets received of a packet chain so that such chains can be properly processed; paragraph 0028. Packet chains are packets for which a service class in unable to be determined until a required number of packets have been received, therefore incompletely classified payloads; paragraph 0028. Thus it would be obvious to one skilled in the art that the combination of Mizell and Lundin teaches a processor for determining if a packet is part of a chain packet (identifying incompletely classified data) and storing an chain ID value (aggregated volume count or information associated with incompletely classified payload data). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the GTP packets of Mizell to include chain ID as taught Lundin in order to handle packet chains.

17. Claims 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizell and Lundin as applied to claim 37 above, and further in view of Bos.

Regarding claim 39, the combination of Mizell and Lundin teaches the serving node according to claim 37, but does not specifically teach wherein said charging node is a CAMEL node and the procedures used by at least one of said means for communicating with said

CAMEL node is following CAMEL reporting procedures. However, at the time the invention was made the preceding limitation was known in the art of communications.

Bos teaches a GPRS network comprising CAMEL nodes that uses a CAP protocol interface to communicate charging information between the bearer level system (i.e. the GGSN and the SGSN) and a CAMEL SCP (service control point) in order to remove the need for a separate charging interface and thus optimize the network architecture. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the charging function of Mizell and Lundin to incorporate a CAMEL architecture as taught by Bos in order to optimize the network architecture.

Regarding claim 40, the combination of Mizell, Lundin, and Bos teaches the serving node according to claim 39, wherein said accumulated volume is accumulated from classified and/or incompletely classified payload volumes, said accumulated volume count is being maintained as long as said PDP context is active (i.e. Lundin teaches that chain IDs are used to handle packet chains for which a service class in unable to be determined until the required number of packets have been received, therefore incompletely classified payloads; paragraph 0028).

18. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizell in view of Lundin and further in view of US 2003/0120499 to MacLean et al.

Regarding claim 42, Mizell teaches a gateway node for communicating within a system performing packet inspection and service classification, said system comprising a packet data network and a serving node, wherein IP data packets comprising payload data may be communicated for identification of a given predetermined service class out of a plurality of predetermined service classes within said system, said gateway node comprising:

means for receiving IP data packets in a continuous stream of IP data packets associated with a given PDP context (i.e. GGSN receives a data packet from an IP network, therefore a receiver on a network port; paragraph 0025, 0030, 0039);

means for determining the service class of the payload data of said IP data packets associated with said PDP context payload (i.e. GGSN assigns a charging rate for each downloaded packet based on the packet contents (service class), therefore a processor for determining packet content type; paragraph 0030, 0041);

means for storing an accumulated downlink volume count associated with said service class (i.e. GGSN keeps track of the volume of packets delivered to a SGSN through a PDP context and each packet's charging rate (service class), therefore a processor and memory for storing downlink volume; paragraph 0039, 0045);

means for generating service class extension headers containing said service class for the downstream payload means for inserting said extension headers in packet data packet units (i.e. GGSN creates a GTP packet by encapsulating the downloaded packet, therefore a processor for inserting extension headers into packets; paragraph 0030, 0040);

means for inserting said payload data in packet data packet units (i.e. GGSN creates a GTP packet by encapsulating the downloaded packet, therefore a processor for inserting payload data into packets; paragraph 0030, 0040); and

means for transmitting said packet data units to said serving node (i.e. GGSN transfers the GTP packet to a SGSN, therefore a transmitter on a Gn interface; paragraph 0030, 0039).

Mizell does not specifically teach that the continuous stream of data packets is an *upstream* nor: means for storing an accumulated uplink volume count associated with said

service class; and means for generating service class extension headers containing said service class for the upstream payload, said accumulated uplink volume count, and said accumulated downlink volume count; however, at the time the invention was made the preceding limitation was known in the art of communications.

Lundin teaches a GPRS network wherein the GGSN adds traffic type indicators to the GTP header that are used to indicate the appropriate charging scheme to each packet; paragraph 0028. Lundin teaches that one of the indicators may be the chain ID (volume count) to keep track of the number of packets received of a packet chain so that such chains can be properly processed; paragraph 0028. Packet chains are packets for which a service class in unable to be determined until a required number of packets have been received, therefore incompletely classified payloads; paragraph 0028. Thus it would be obvious to one skilled in the art that the combination of Mizell and Lundin teaches a processor for storing a chain ID value (aggregated volume count or information associated with incompletely classified payload data) and creating GTP headers with chain ID values. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the GTP packets of Mizell to include chain ID as taught Lundin in order to handle packet chains.

However, the combination of Mizell and Lundin does not specifically teach that the continuous stream of data packets is an *upstream* nor means for generating service class extension headers containing said service class for the *upstream* payload and said accumulated *uplink* volume count.

MacLean teaches a context-based billing service in a GPRS network wherein both the uplink and downlink traffic are monitored and their volume is counted for context based billing;

paragraph 0025. Thus it would be obvious to one skilled in the art that the combination of MacLean with Mizell and Lundin teaches a receiver for receiving uplink traffic and a processor generating GTP extension headers for the uplink traffic. MacLean teaches that the GPRS network works to track the volume limits of prepaid customers and provide accurate billing for both uplink and downlink traffic. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the GPRS network of Mizell to provide context-based billing for upstream traffic as taught MacLean in order to provide accurate billing for prepaid customers.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Pitt whose telephone number is (571) 270-7466. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571) 272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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